

INL Nominates Six Technologies for R&D 100 Competition

The Idaho National Laboratory has selected six key technologies to represent the laboratory in the R&D Magazine's world-wide competition for the top 100 technologies in 2006.

Idaho's national laboratory has had at least one winner for the past nine years and in 2005, one technology was selected - the HazMatCam for use by first responders in hazardous situations. INL researcher Kevin Young was honored at a special dinner at Navy Pier in Chicago in October 2005.

The six technologies representing INL are:

Nano-Composite Arsenic Sorbent (N-CAS)

Summary: INL researchers developed a long-lasting, high-capacity nano-composite polymer particle engineered to remove arsenic concentrations from water rendering it safe to drink and compliant with U.S. and world standards.

Fact Sheet: [Nano-Composite Arsenic Sorbent](#) - 1.8MB PDF

Video: [Nano-Composite Arsenic Sorbent](#) - 5.1MB WMV

Research Team: Troy Tranter, Nick Mann, Scott Herbst, Terry Todd

Tech Transfer Contact: Gary Smith, (208) 526-3780,



Xtreme Xylanase (Hemicellulase)

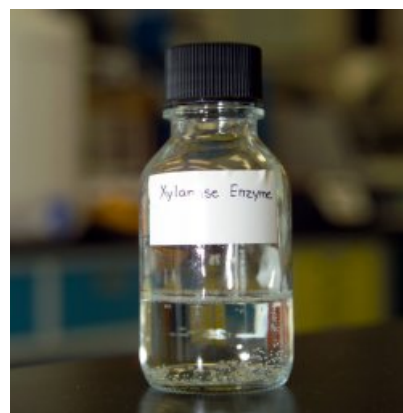
Summary: INL researchers discovered a highly acid and thermostable xylanase (enzyme) that breaks down cellulose and hemicellulose from biomass into simple sugars used to produce fuels and chemicals.

Fact Sheet: [Xtreme Xylanase Discovery Aims to Revolutionize Biorefineries](#) - 245kB PDF

Video: [Xtreme Xylanase](#) - 4.8MB WMV

Research Team: Bill Apel, Vicki Thompson, David Thompson, Kastli Schaller, Elizabeth Taylor

Tech Transfer Contact: John Snyder, (208) 526-9812,



Medical Actinium for Therapeutic Treatment (MATT)

Summary: INL Researchers have developed two separations processes that recover actinium-225 from nuclear waste, increasing world production by 75X, doubling available source material, and enabling clinical cancer trials to proceed.

Fact Sheet: [Medical Actinium for Therapeutic Treatment \(MATT\)](#) - 268kB PDF

Videos:

[MATT Technology](#) - 5.7MB WMV

[MATT Benefits](#) - 3.1MB WMV

Research team: David Meikrantz, Troy Tranter, Leroy Lewis, Joseph Henscheid, Terry Todd, E. Phillip Horwitz

Tech Transfer Contact: John Snyder, (208) 526-9812,



Small-Scale Natural Gas Liquefier

Summary: INL researchers have perfected a new, patented process to make LNG (liquefied natural gas) directly from pipeline gas without pre-treatment for CO₂ removal at prices competitive with large-scale LNG plants.

Fact Sheet: [New LNG Plant Technology](#) - 141kB PDF

Video: [Compact High Efficiency Natural Gas Liquefier](#) - 3.9MB WMV

Research team: Bruce Wilding, Terry Turner, Mike McKellar, Kerry Klingler, Dennis Bingham, Frank Carney

Tech Transfer Contact: David Anderson, (208) 526-0837,



Blue Mussel Adhesive

Summary: INL researchers have identified DNA sequences/clones for producing exceptionally strong, water impervious, non-toxic blue mussel adhesive proteins that in production quantities now possible could revolutionize adhesives technology (especially in surgery and aqueous environments).

Fact Sheet: [Natural Adhesive Systems](#) - 176kB PDF

Video: [Blue Mussel Adhesives](#) - 5.0MB WMV

Research team: Frank Roberto, Heather Silverman

Tech Transfer Contact: John Snyder, (208) 526-9812,

Robot Intelligence Kernel

Summary: INL engineers have developed a low-cost, on-board control architecture that gives robots exceptional new levels of autonomy and "intelligence" that revolutionizes robot capabilities and the robot/operator relationship.

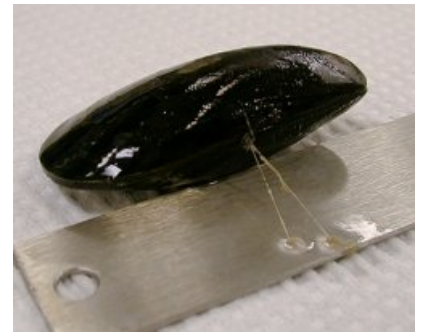
Fact Sheet: [Intelligence Kernel Enables Robot](#)

[Autonomy](#) - 310kB PDF

Video: [INL Robot Intelligence Kernel](#) - 8.5MB WMV

Research team: David Bruemmer, Douglas Few, Miles Walton

Tech Transfer Contact: Tom Harrison, (208) 526-1710,



R&D Magazine has held this competition since 1963 to focus attention on emerging technologies and key advances in a wide variety of areas. Early submissions are accepted Feb. 1, 2005 and the final results from more than 60 judges will be announced the first part of July. Examples of well-known technologies that have won this prestigious award include liquid crystal display in 1980, Kodak Photo Compact Disk 1991 and High Definition TV in 1998, among many others.

General Contact:

Communications,

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